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(11) EP 0 843 099 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
16.06.1999 Bulletin 1999/24

(51) Int. Cl.⁶: F04D 5/00

(43) Date of publication A2:
20.05.1998 Bulletin 1998/21

(21) Application number: 97119630.8

(22) Date of filing: 10.11.1997

(84) Designated Contracting States:
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC
NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: 18.11.1996 US 751600

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(54) Methods of manufacturing automotive fuel pumps with set clearance for the pumping chamber

(57) The turbine assembly (10) of a fuel pump includes a pair of housings (12,14) having an impeller (16) disposed between the housings (12,14) with a minimum clearance. In a first form, there is provided a spacer (32) between the housings (12,14) which can be crushed between a pair of press platens such that the combined depth of the spacer (32) and recess (18) in one of the housings (12,14) receiving the impeller (16) equals the depth of the impeller (B) and the minimum clearance. In another form, the housings (12,14) may be precisely located and laser-welded one to the other to provide the minimum clearance between the impeller (16) and housings (12,14). In a third form, an annular spacer (32) is disposed between the flat faces of the opposed housings and crushed to a predetermined depth (C) such that the spacer depth equals the depth of the impeller (B) and the minimum clearance.

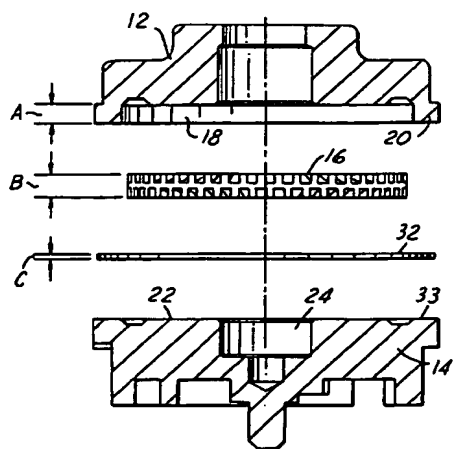


FIG. 1

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EUROPEAN SEARCH REPORT

Application Number

EP 97 11 9630

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
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A	* column 1, line 24 - column 5, line 23 * ---	2,12	
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 8 March 1999	Examiner Ingelbrecht, P
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons A : technological background O : non-written disclosure P : intermediate document	

EPO FORM 1503 03.82 (P04C01)

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